

Space News **ROUNDUP!**

VOL. 4, NO. 24

MANNED SPACECRAFT CENTER, HOUSTON, TEXAS

SEPTEMBER 17, 1965

Washington Ceremonies Honor Gemini V Crew, Dr. Berry; Thirteen-Day Goodwill Tour Of Six Foreign Nations Begins

Astronauts L. Gordon Cooper Jr. and Charles Conrad Jr., along with Dr. Charles A. Berry, were presented NASA Exceptional Service Medals by President Johnson in ceremonies at the White House on Tuesday before leaving on their 13-day goodwill tour of six countries.

The President told the astronauts before the medal ceremony, that he was sending nominations for their military promotions to the Senate immediately. Cooper is being promoted to Air Force colonel and Conrad to commander in the

Navy.

After the White House Ceremonies, Cooper, Conrad, Dr. Berry and their families, were accompanied by NASA Administrator James E. Webb and Vice President Hubert H. Humphrey to the National Academy of Sciences. There the astronauts and Dr. Berry spoke on the results and significance of the color photos they took from space, and the medical charts.

The group then rode in a motorcade up Constitution Avenue. A visit was paid to the House of Representatives where

Cooper and Conrad addressed that group. A special recess was called by the Senate for a visit by the astronauts and their group. The astronauts and Dr. Berry spoke briefly to the Senate.

Wednesday the Gemini V astronauts, Dr. Berry and their families left Washington, D.C. on the goodwill tour of points in Europe, Asia Minor and Africa

where they are scheduled to make public appearances.

The first public appearance of the group was to be in Athens, Greece, today.

Stops on the astronaut's goodwill tour also include Izmir, Turkey; Ankara, Turkey; Addis Ababa, Ethiopia; Tananarive, Malagasy; Nairobi, Kenya; Lagos, Nigeria; and Kano,

Nigeria. At each of these cities a public appearance and an overnight stop is planned. The final stop before returning to the United States on September 28, is to be at Las Palmas, Canary Islands.

Earlier, on September 9, here at the Manned Spacecraft Center, the Gemini V crewmen had

(Continued on Page 2)

Mercury Boilerplate

Spacecraft Lost In '62 Recovered

A rusty, collapsed and twisted piece of metal with a packed parachute attached was found in Galveston Bay August 24 by the shrimp boat "Nancy" and the whereabouts of a long lost spacecraft was solved.

The spacecraft was lost May 31, 1962 when the first drop of a boilerplate spacecraft was conducted in the Bay area by the Operational Evaluation and Test Branch of the Landing and Recovery Division of the Manned Spacecraft Center.

This drop was one of the first outward signs of activity by the newly arrived NASA organization in Houston. Members of the

local press were on hand at Ellington to witness the loading of the boilerplate spacecraft into the C-119 aircraft of the 446th Troop Carrier Wing.

The purpose of this test was to

qualify a new method for deploying a spacecraft out of aircraft in preparation for conducting tests of a gliding parachute system.

A lanyard that was to have

(Continued on Page 3)



L. GORDON COOPER JR., GEMINI V COMMAND PILOT



CHARLES CONRAD JR., GEMINI V PILOT



A BEFORE TYPE—The type boilerplate Mercury spacecraft used in the first drop in Galveston Bay is shown above. This is the one that was used in a successful drop the following month.



PARACHUTE ATTACHED—The parachute that failed to open when a lanyard broke as a Mercury boilerplate spacecraft was dropped from a C-119 aircraft over Galveston Bay in 1962, is shown with what remains of the spacecraft after a 1500 foot free-fall into the shallow water of the Bay. Fred Koons of the MSC Landing and Recovery Division, talks to Capt. John Walden of the shrimp boat "Nancy", in the background. Captain Walden recovered the twisted remains and the parachute on August 24 of this year.

NASA Recruiting Additional Pilot-Astronauts

Recruiting of additional pilot-astronauts for the National Aeronautics and Space Administration's manned spaceflight missions began September 10.

The selection process is to be completed by next spring and the new group of astronauts will report for duty at the Manned Spacecraft Center next summer.

Criteria for the selection of this new group will be the same

as that used in selecting 14 pilot-astronauts in 1963, with the exception of the birthdate.

The new group will join the present 28 pilot-astronauts and five scientist-astronauts now participating in the NASA manned spaceflight program. Recruitment of additional pilot-astronauts is necessary to insure availability of an adequate number of flight crews for the Apollo

project and future manned missions. NASA also plans to recruit additional scientist-astronauts sometime next year.

To be eligible for selection applicants must: 1. Be a citizen of the United States; be no taller than six feet; and have been born on or after Dec. 1, 1929. 2. Have a bachelor's degree in engineering, physical or biological science. 3. Have acquired

1000 hours of jet pilot time or have graduated from an armed forces test pilot school.

Military applicants must apply through their respective services. Others should send applications, postmarked no later than midnight Dec. 1, 1965, directly to: Pilot-Astronaut, P. O. Box 2201, Houston, Tex.

All applicants must be able to pass a class-1 flight physical

examination, which requires 20-20 uncorrected vision. Civilian applicants and military reservists should submit a standard Civil Service form 57, application for Federal Employment, available at all U.S. Post Offices, or submit a resume of their employment experience and academic training. Civilian applicants also should send a statement of their total jet flying time.

Gemini V Astronauts Meet With News Representatives After Post Flight Seclusion



PRESS CONFERENCE—At the Gemini V press conference September 9 are (left to right) Paul Haney, public affairs officer; Dr. Robert R. Gilruth, director MSC; Astronaut L. Gordon Cooper Jr.; Astronaut Charles Conrad Jr.; and Dr. Robert Seamans, NASA associate administrator.

Press Conference

(Continued from Page 1)

their first question and answer session with the press since their historic eight-day flight.

Cooper, the command pilot, described the liftoff of Gemini V as very smooth and positive with the trajectory "almost as perfect as a trajectory could be."

He said, "I found, personally, that the Gemini launch vehicle

was considerably smoother and more solid than the Atlas that I had ridden before. And I had thought the Atlas was a mighty good launch vehicle, too."

One small period of pogo was encountered on liftoff, Cooper said, which caused no problem at all.

Of the fuel cells, Cooper said, "I'm here to tell you that the fuel cells couldn't have been more perfect. The only little problems involved were in these very, very advanced cryogenic

systems that power the fuel cells."

After Cooper gave a general description of the flight, Conrad's first words at the press conference were "Well, the first thing I'd like to say is that I think my heart rate's a lot higher here right now than it was at liftoff. I don't think I'll ever get used to this part of the program."

Conrad said that they succeeded in doing at least part of every experiment they set out to

do on the mission. He said they completed all the UHF tests and took about 350 photographs, plus some 16mm film strips.

Absolutely no change in the crews vision throughout the flight was indicated by the on-board vision testing device, Conrad said.

One of the slides shown, that Cooper and Conrad took on the flight, was of the hurricane Betsy during its infancy.

Conrad described the radar and computer platform operation as excellent, and also a perfect ejection of the rendezvous evaluation pod (REP), even though the experiment could not be completed.

Work with all the ground network was described by Cooper as being extremely successful.

Cooper and Conrad attributed the landing short of the target to a slight error in the landing parameters in the onboard computer. This error over a period of days added up to the short landing, Conrad said.

Housekeeping was described as one of the main chores on the flight. However everything was very carefully stowed for the reentry, Cooper stated.

Both crewmen said they did not at any time feel any ill effects from the flight and both indicated a readiness to make another flight.



HOUSTON ARRIVAL—Astronauts Charles Conrad Jr., and L. Gordon Cooper Jr., say a few words of greeting after their arrival at Ellington AFB from Cape Kennedy aboard the Gulfstream on September 2. About 500 people were on hand on a rainy afternoon to greet the Gemini V crew. They had been holding debriefings at the Cape prior to arrival here.



WAITING IN RAIN—These children, protected from the rain by umbrellas, were on hand to greet the Gemini V astronauts. A steady downpour let up just as the plane carrying Conrad and Cooper landed at Ellington AFB.



RETURN TO LAND—Upon arrival at Cape Kennedy from the aircraft carrier USS Lake Champlain August 30, Astronauts Charles Conrad Jr. and L. Gordon Cooper Jr., pose with Florida Governor Hayden Burns, after the Governor presented the Gemini V astronauts with a plaque of the Great Seal of Florida.

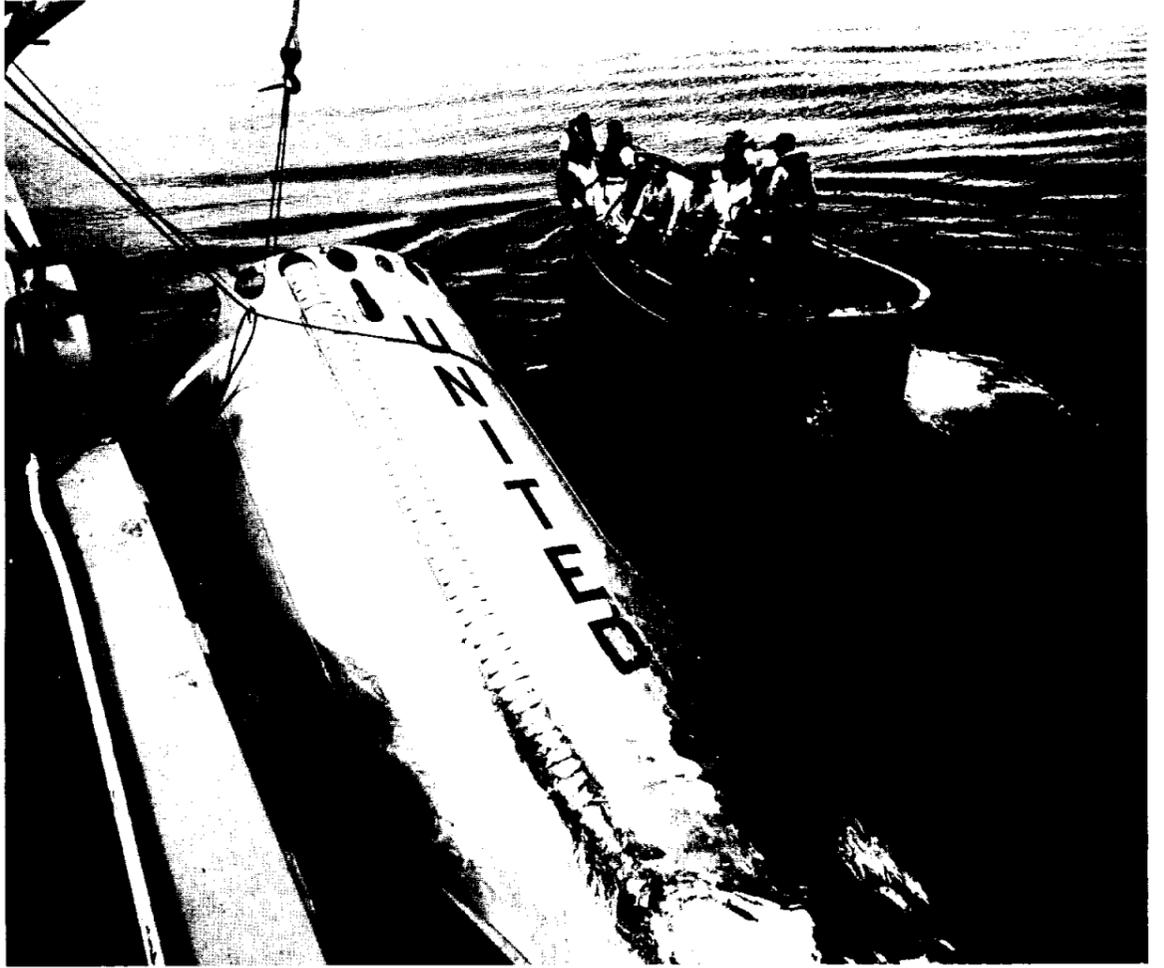


WELCOME BACK CAKE—Astronaut Charles Conrad Jr., pilot of the Gemini V spacecraft, prepares to cut the "Welcome Back" cake presented to the two astronauts by the USS Lake Champlain crew.

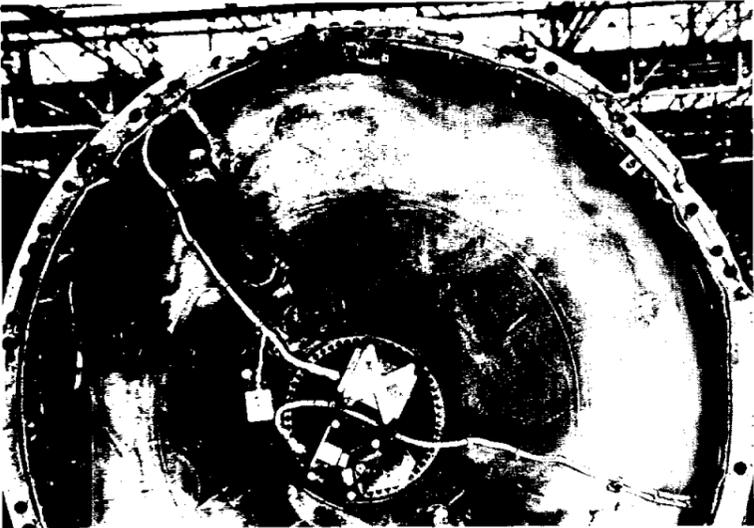
Gemini V Titan Booster First Stage Recovered From Atlantic In Remarkable Condition



SECURING BOOSTER—Sailors onboard the USS Dupont secure the first stage of the Titan booster that was recovered from the Atlantic after the launch of the Gemini V spacecraft August 21.



BOOSTER RECOVERED—Recovery of a large section of the Gemini V booster, the first ever to be retrieved from a manned space launch, was made by the destroyer USS Dupont. The booster launched the Gemini V spacecraft from Cape Kennedy, Fla., August 21, and fell back into the Atlantic Ocean about 450 miles north-east of the Cape and is shown here about to be hoisted to the destroyer's deck.



AT MARTIN PLANT—The recovered first stage of the Gemini V booster is shown after being returned to the Martin Company plant in Baltimore, Md. where it was built. This close-up view of the upper bulkhead shows the remarkable condition of the booster after its crash landing in the Atlantic some 450 miles from Cape Kennedy.

Moon Rocket Simulator



SATURN V PREPARATIONS—An S-II (second stage of the Saturn V Apollo moon rocket) Simulator was placed into the 200-foot-tall static test stand, August 29, at the NASA Mississippi Test Facility. The Simulator, like the "real" S-II rocket, is 81 feet long and 33 feet in diameter. It weighs 75,000 pounds. The Simulator is being used to train crews in the handling of the rocket and check out the test stand. The first "live" rocket will be delivered to the test site in October for firing early next year.

Lost Mercury

(Continued from Page 1)

pulled the parachute out of the canister in the spacecraft, as it left the C-119, broke and the 2150 pound boilerplate Mercury went in a free-fall from 1500 feet into the mud of Galveston Bay.

A search was conducted for

the boilerplate spacecraft but it proved futile because the hulk was apparently buried in the mud out of sight.

For over three years the spacecraft lay undiscovered until August 24 when Capt. John Walden of the shrimpboat "Nancy" hooked the remains of the boilerplate Mercury spacecraft and brought it into port at Seabrook.

Apparently the parachute was forced from the canister upon impacting the water, but was

still packed in its bag with the rubber bands holding it intact.

Fred Koons from the Landing and Recovery Division claimed the remains of the spacecraft for MSC and returned it to Ellington AFB from whence it began its ill-fated trip in 1962.

A similar drop test of the same type boilerplate spacecraft was conducted over Trinity Bay the middle of June in 1962 and this test was successful, with the spacecraft being recovered in good shape.

MSC Employees To Deliver Papers At AIAA Meet

Several MSC employees are to present papers at an American Institute of Aeronautics and Astronautics technical meeting October 11-13, 1965.

The meeting will be held at the Chase-Park Plaza Hotel, St. Louis, Mo.

George M. Low, deputy director, MSC, is scheduled as chairman of the meeting entitled, "Current Manned Space Program Status," to be held Monday, October 11, at 9 a.m. A paper to be presented at this meeting will be "The Apollo Spacecraft" by William A. Lee, assistant manager, Apollo Spacecraft Program Office.

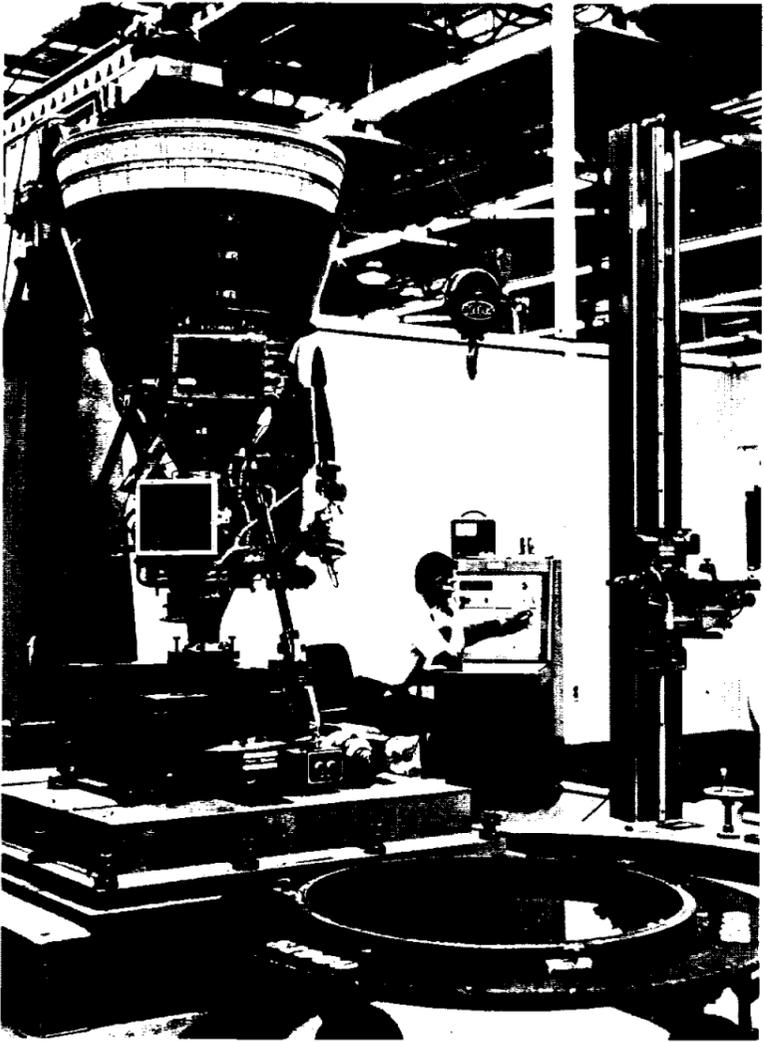
Maj. E. G. Givens, Modular Astronaut Maneuvering Unit project officer, Air Force Systems Command Field Office, is scheduled to present a paper on "Description and Status of DOD Gemini Experiment D-12 Modular Astronaut Maneuvering Unit (MAMU)" Wednesday, October 13.

A paper on "Status of Pressure Suits" will be presented also Wednesday, October 13, by Richard S. Johnson, chief, Crew Systems Division.



MERCURY REMAINS—The remains of the boilerplate Mercury spacecraft that fell 1500 feet into Galveston Bay without the benefit of its parachute is shown on the aft end of the shrimp boat that towed it into Seabrook.

Vital Part Played By Pratt & Whitney RL10 Rocket Engines



ROCKET DEVELOPMENT TEST—A development engineer conducts one of many tests which have made the RL10 liquid hydrogen rocket engine a pioneering outerspace powerplant for the nation's space effort. Designed and developed by Pratt & Whitney Aircraft at the Florida Research and Development Center for the National Aeronautics and Space Administration, the RL10 powers Centaur and the Saturn S-IV space vehicle.

With the development of the RL10 rocket engine at the company's Florida Research and Development Center, Pratt & Whitney Aircraft proved that liquid hydrogen was a practical fuel for use in the nation's space program.

During six flights of Saturn I with S-IV (second) stages, 36 RL10s — six on each vehicle — gave perfect performances to demonstrate the value of this high-energy fuel for outer space propulsion.

Although pioneering an entire new technology with hydrogen, engineers at the Florida Research and Development Center tested the first RL10 thrust chamber only seven months after the starting date of the contract in mid-October 1958. The engine passed its official Preliminary Flight Rating Test for the National Aeronautics and Space Administration's Marshall Space Flight Center just three years after beginning initial engine design.

With a total running time of more than 260 hours, the 15,000-pound-thrust RL10 has been

test fired nearly 7,000 times in the field and at the Florida Research and Development Center. The engine now features many state-of-the-art advances, including a 25 to 1 throttling capability and operation with alternate propellants such as fluorine-hydrogen and FLOX with the liquefied petroleum gases.

The RL10's initial flight into space occurred on November 27, 1963, when it boosted a Centaur space vehicle on the first hydrogen-powered flight in the U. S. space program. Two months later, on Jan. 29, 1964, six RL10s helped boost a 37,700-pound payload into Earth orbit to successfully culminate the first test flight of the Saturn S-IV stage.

Since the first Saturn S-IV flight, there have been five more consecutive successful launches of that vehicle, three of which placed Pegasus satellites in orbit to measure meteoroid density. In addition, the RL10 has powered four successful Centaur vehicles, the last one carrying a dynamic model of the Surveyor spacecraft on a simulated flight

to the moon.

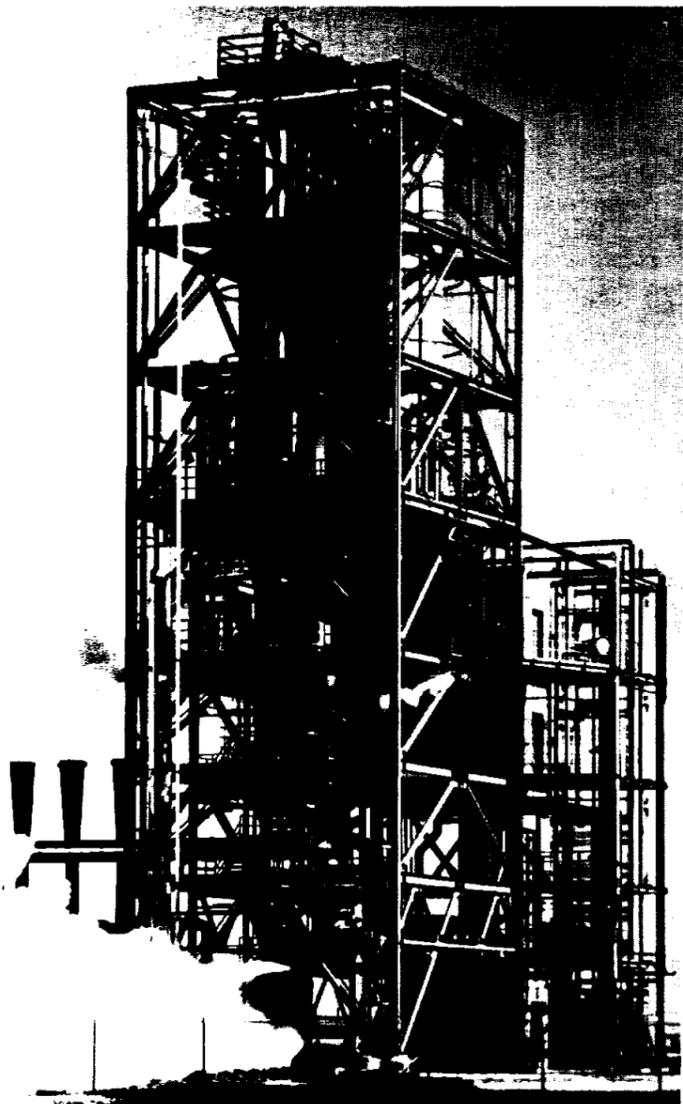
Later this year, the RL10-powered Centaur is scheduled to carry a Surveyor spacecraft for a soft lunar landing to gather vital information preceding manned exploration of the moon.

Based on the RL10's record, the National Space Club awarded the Florida Research and Development Center the Nelson P. Jackson Aerospace Award for 1965 "for demonstrating the technical feasibility of liquid hydrogen as the next high energy fuel for extending the horizon of space exploration."

The Florida Research and Development Center is part of the Pratt & Whitney Aircraft division of United Aircraft Corporation. Since it was founded in 1925, Pratt & Whitney Aircraft has been a leader in the development of flight engines. During World War II, the company's engines powered more than half the aircraft used by the Allied air forces. The company's gas turbine engines now power many front line military fighters and bombers as well as more than 90 per cent of the Boeing and Douglas jet transports in service with commercial airlines.

The Air Force's YF-12A, which uses the J58 jet engine

EDITOR'S NOTE: This is the second in a series of articles being presented to acquaint the employees of the Manned Spacecraft Center with the contractors who make the Saturn launch vehicles and related equipment that will be used in the Apollo program. The material on these two pages was furnished by Pratt & Whitney Aircraft.

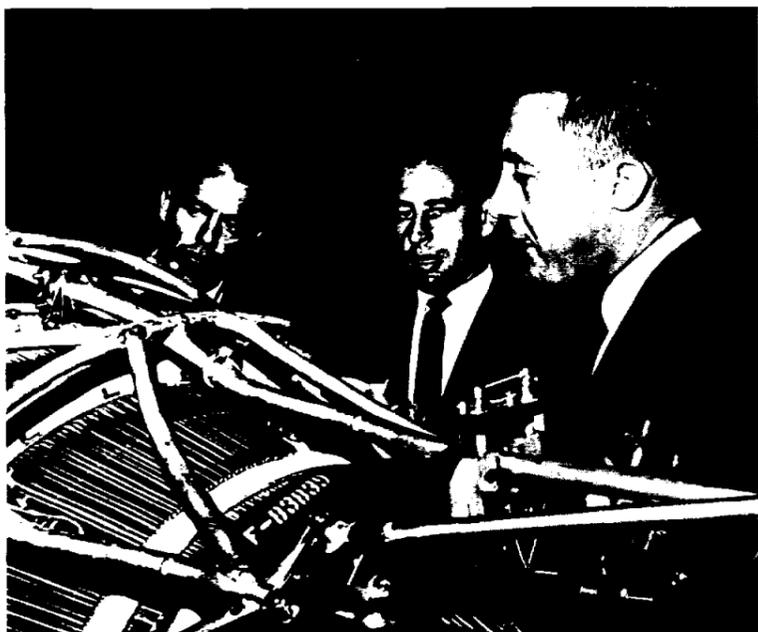


SIMULATED SPACE FIRING—An RL10 liquid hydrogen rocket engine is fired under simulated space conditions at Pratt & Whitney Aircraft's Florida Research and Development Center. More than 7,000 firings have been conducted during the continuing development program for the rocket engine. A division of United Aircraft Corporation, P&WA designed and developed the RL10 for NASA's Saturn S-IV and Centaur space vehicles.



ENGINE COMPONENTS—Astronaut Edward White, center, is briefed on the RL10 rocket engine program during a visit to the Pratt & Whitney Aircraft Florida Research and Development Center. Explaining engine components to the astronaut are Richard Coar, engineering manager at the Research Center, and James Lonsdale, manager of rocket engine marketing.

In Saturn Program



THRUST CHAMBER—Astronauts Alan Shepard, left, and Virgil Grissom, right, examine the thrust chamber of an RL10 rocket engine during a visit to Pratt & Whitney Aircraft Florida Research and Development Center. With them is Richard H. Anschutz, RL10 program manager, at the Research Center.

developed at the Florida Research Center, recently set nine new world flight records, including those for speed over a straight course (2,062 mph) and sustained altitude in horizontal flight (80,000 feet).

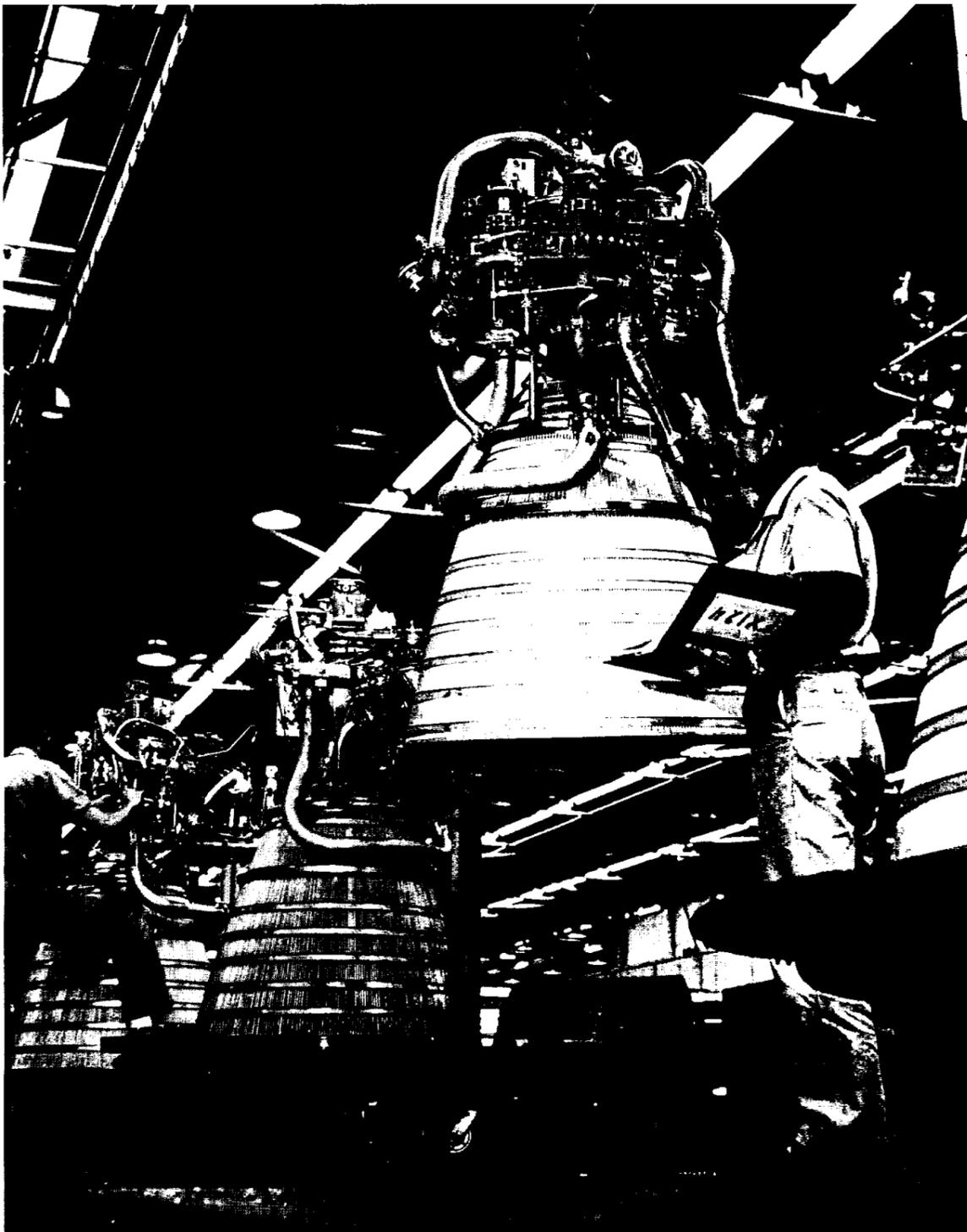
Pratt & Whitney Aircraft established its 6,750-acre Florida Research and Development Center in 1956 primarily to test highly advanced propulsion systems. Main buildings were completed in 1958 and soon afterward the rocket engine test complex was built at the facility located on the edge of Florida's famed Everglades about 25 miles from West Palm Beach.

The Research Center's rocket test area includes horizontal and vertical engine firing stands and complete component test facilities all equipped to simulate conditions engines will encounter in space. One of the test complexes gives Pratt & Whitney Aircraft the capability of testing all known combinations of liquid propellants, including high energy types such as fluorine, hydrazine, diborane, and hydrogen.

Looking to the future, the Research Center has an extensive department of applied research where areas of study include mission analysis, engine

and controls analysis, systems engineering, combustion, heat transfer, turbomachinery, and fluid flow. In this area, Research Center engineers are continuing the development of components for a hydrogen rocket propulsion system which has included firings with chamber pressures exceeding 3,000 psi.

W. L. Gorton is general manager of the Florida Research and Development Center which has about 5,500 employees. Program Manager of the RL10 project is Richard H. Anschutz. Others who had key roles in the development of hydrogen technology and the RL10 engine are: Richard J. Coar, engineering manager, Bruce N. Torell, chief engineer, Richard C. Mulready, assistant chief engineer, and Gordon Titcomb, former RL10 program manager.



POWER FOR S-IV—Technician inspects RL10 rocket engine on the assembly floor of the Pratt & Whitney Aircraft Florida Research and Development Center. Six RL10s powered the S-IV stage of NASA's Saturn I. A pair of RL10s will propel the Centaur space vehicle when it carries the first Surveyor spacecraft to the moon later this year.



W. L. GORTON
general manager of the Pratt & Whitney Aircraft Florida Research and Development Center



FLORIDA FACILITY—The main manufacturing building at Pratt & Whitney Aircraft's Florida Research and Development Center has about 17 acres of floor space; five acres of offices and 12 acres of experimental shop area. The combined facilities at the 6,750-acre Research Center cover approximately one million square feet of floor space.

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On The Lighter Side

(FILCHED FROM GENERAL DYNAMICS NEWS)



"Now, make ten more copies of the letter. Spell everything exactly the same way . . . I want to pass them around for laughs!"

Space News Of Five Years Ago

SEPT. 20, 1960—The Atlas launch vehicle 67-D was delivered to Cape Canaveral for the Mercury-Atlas 2 (MA-2) reentry test mission.

SEPT. 21, 1960 — During weightless training in a modified C-135 jet aircraft, the astronauts were checked for changes in normal speech and their ability to control a tracking problem while undergoing moderate g-load prior to entering the weightless periods.

SEPT. 26, 1960—The roll-out inspection of Atlas launch vehicle 77-D was conducted at Convair-Astronautics. This launch vehicle was allocated for the Mercury-Atlas 3 (MA-3) mission, but was later canceled and Atlas booster 100-D was used instead.

SEPT. 26, 1960—The roll-out inspection of Atlas launch vehicle 77-D was conducted at Convair-Astronautics. This launch vehicle was allocated for the Mercury-Atlas 3 (MA-3) mission, but was later canceled and Atlas booster 100-D was used instead.

SEPT. 27, 1960 — Mercury spacecraft No. 3, initially deliv-

ered to Langley on July 29, 1959, for a noise and vibration test, was erected at the Wallops Island launch site for the Little Joe 5 (LJ-5) test.

SEPT. 27, 1960—The parachute designed to slow reentry speed of space capsules was successfully tested at a speed of 2,000 mph after rocket boost to 30-mile altitude, over Eglin AFB, Fla.

SEPT. 30, 1960—Mercury spacecraft No. 5 was delivered to the Marshall Space Flight Center for booster compatibility checks, and was shipped to Cape Canaveral on Oct. 11, 1960, for the Mercury-Redstone (MR-2) ballistic-primate (Ham) mission.

SEPT. 30, 1960 — Formal agreements for all NASA tracking stations, planned at this time, were either concluded or near conclusion.

DURING SEPTEMBER — Flight-type pressure suits were received from the B. F. Goodrich Co. and were immediately used on the human centrifuge to assist in determining final adjustments that were necessary in preparation for manned space flights.

Fourth X-15 Conference To Be Held

Technical results obtained from the X-15 research program during the past four years will be presented at the fourth X-15 Conference on October 7.

The conference is being sponsored by the Research Airplane Committee which is comprised of representatives of the National Aeronautics and Space

Administration, the U.S. Air Force, and the U.S. Navy.

Since the last X-15 Conference, which was held in November 1961, the three X-15 aircraft will have made an additional 100 flights. During this time the rocket powered aircraft has increased its maximum flight altitude to 354,200 feet.

Out Of Texas' Past . . .

Easily Galveston's most colorful, energetic and engagingly eccentric citizen of all time was Gail Borden, surveyor, schoolmaster, rancher, newspaper publisher, homeopathic physician, public servant, scientist and inventor.

Born at Norwich, N. Y., in 1801, Gail arrived at Galveston by sea from New Orleans on Dec. 23, 1828. His wife, Penelope Mercer Borden, from Amite County, Miss., bore their first child, Mary, the day after their arrival.

Borden founded the *Telegraph and Texas Register* of San Felipe, seat of Austin's colony, on Oct. 10, 1835. Destined to be the state's leading newspaper until after the Civil War, the *Telegraph* quickly became the official publication of the revolutionary republic. Its press, moved to Harrisburg (now a part of Houston) after the fall of the Alamo, was running off official copies of the Texas Declaration of Independence when Santa Anna captured the town on April 15, 1836.

The invaders, instead of using the press for a propaganda medium, sank it in Buffalo Bayou and burned the town. But Santa Anna, who called himself the Napoleon of the West, was marching to his western Waterloo. Less than a week later Sam Houston's volunteers destroyed the dictator's forces at San Jacinto and captured Santa Anna himself.

President Houston appointed Borden customs collector at

Galveston, and the island city has never had a more public-spirited citizen. Although frail all of his life, Borden became a kind of ex-officio fire marshal, police chief, commandant of militia and water commissioner. And he ran the customhouse so well that its collections were the new republic's principal revenue.

At his home and observatory on Thirty-fifth Street at Avenue P, Borden raised figs and seven children and worked on various inventions. He built a "locomotive bathhouse" (designed to provide privacy for ladies), which could be moved into the surf and back to the beach by a winch in his yard. Elected alderman, he organized a special force of 20 constables and drove the New Orleans gamblers out of Galveston. And he designed, built and operated more or less successfully a multi-passenger "terraqueous machine," a sail-propelled amphibious vehicle that could tear along the beach at 30 miles an hour, then take to the water and sail before the breeze.

He conceived grandiose plans for converting all Catholics to the Baptist faith. In a scheme at least a century ahead of current medical thought, he postulated human hibernation at reduced body temperatures for protection during yellow fever epidemics. And he devised a revolutionary propulsion system for steamboats.

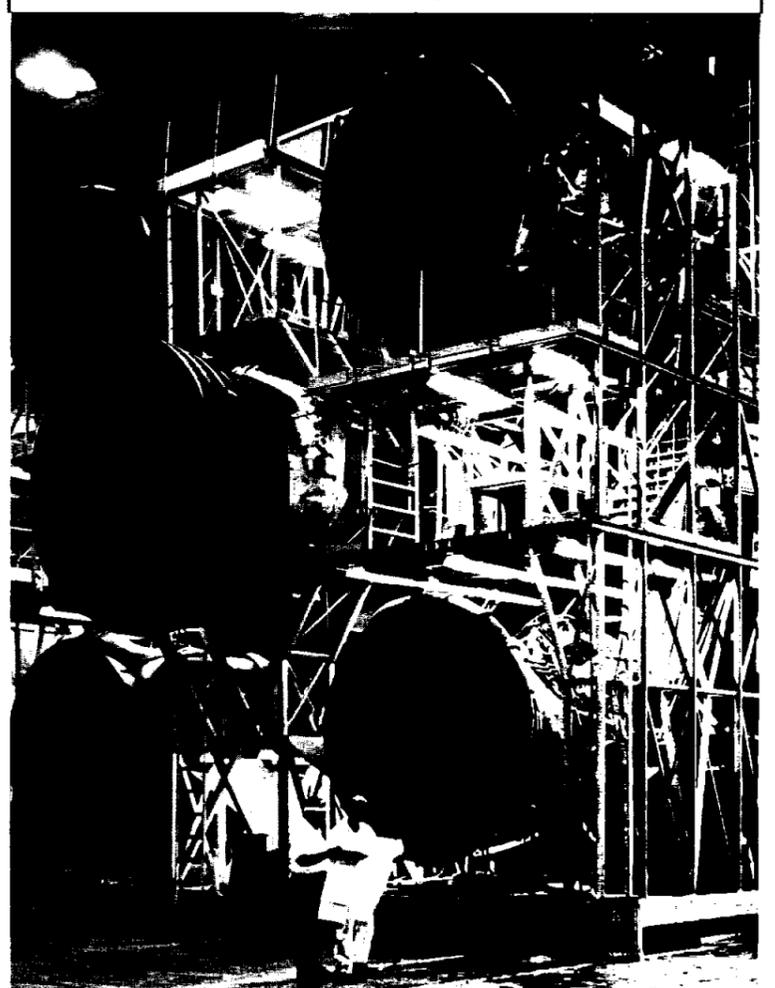
(EDITOR'S NOTE: To acquaint MSC employees with the rich historical background of the Galveston Bay area, and of Texas in general, a series of historical articles prepared by the Historical and Library Services Branch will appear in the Roundup.)

In partnership with Dr. Ashbel Smith (see *Out of Texas' Past*, Aug. 20, 1965), Borden invented and marketed a dehydrated, concentrated "meat biscuit," that could be reconstituted by adding water—somewhat like some of the foods prepared for the Gemini astronauts. Although the meat biscuit won one of five gold medals awarded American inventors at the Great Council Exhibition in London in 1851, it was rejected as "unpalatable" by the United States Army. Borden also manufactured what today would be called instant coffee and instant tea, but they also failed to catch on—like all save one of his inventions.

The inventor was 56 years old when he met Jeremiah Milbank on a Connecticut-to-New York train and persuaded the financier to invest in a process for condensing milk that Borden had patented with the greatest difficulty.

The New York Condensed Milk Co., Gail Borden, president, was instantly—and soon enormously — successful. But Penny Mercer Borden never lived to share her husband's triumph. She had died in a yellow fever epidemic in Galveston. Gail himself came back to Texas to die, at the town of Borden, near Columbus, on Jan. 11, 1874.

160-Million Horsepower Giant



S-1C FOR 1967 LAUNCH—The "business end" of the Saturn V launch vehicle's first stage (S-1C), showing the nozzles of the five F-1 engines, is seen at the NASA Marshall Space Flight Center's main assembly building. This is the first flight stage (S-1C-1) which is in final assembly at MSFC. It will be launched from the NASA Kennedy Space Center in 1967. Only the center engine in this picture has the uncooled extension of the nozzle in place; the others will be added later. The five engines, made by Rocketdyne, will consume 15 tons of propellant a second, generating some 160,000,000 horsepower at maximum velocity.

Welcome Aboard

Twenty-three new employees joined the Manned Spacecraft Center during the last reporting period.

Center Medical Office: Phyllis A. Johnson and F. Eugene Tubbs (Cape Kennedy, Fla.).

Procurement and Contracts Division: Mildred A. Dolive and Sandra L. Kinney.

Flight Crew Support Division: Carolyn S. Pillow.

Assistant Director for Engineering and Development: Ausley B. Carraway.

Information Systems Division: Marshall A. Heath.

Instrumentation and Electronic Systems Division: H. Dean Cubley and Stephen R. Williams.

Propulsion and Power Division: James R. Mayfield.

Structures and Mechanics Division: Ronald W. DuVal.

Flight Control Division: Warren J. August, Ronald D. Kiehn, and John W. Young.

Landing and Recovery Division: Melvin L. Richmond.

Flight Support Division: Ray E. Mackey, Loyd L. Rutledge, and Joe H. Wilson.

Apollo Spacecraft Program Office: Lucille W. Freer, Doris M. King, Nancy P. Walker, and Dorothy L. Williams (Downey, Calif.)

White Sands Test Facility: Michael J. Goduto.

Space News ROUNDUP!

MANNED SPACECRAFT CENTER, HOUSTON, TEXAS

EMPLOYEE NEWS

Performance Award To Ellis



SSP AWARD—Wilbert E. Ellis (right), an aerospace technologist in the Life Support Systems Section, Systems Development Branch, Crew Systems Division, is presented the Sustained Superior Performance Award. Making the presentation is Aleck C. Bond (left), manager of Systems Tests and Evaluation, Office of the Assistant Director for Engineering and Development.

Slow And Fast Pitch Finalists Vie For Softball Championships

The championship playoffs for the Slow and Fast Pitch softball leagues got underway last week with the Animals taking the Slow Pitch Championship and the Rams winning the first game in the championship match with the Colt 38's.

In the Slow Pitch league, the Animals defeated the Hustlers 15 to 8 and 14 to 13 to take the championship. In the Fast Pitch league, the Rams took the first game from the Colt 38's 4 to 2.

Semifinal playoffs for the championship of the MSC softball leagues were completed

recently with the top finalists being the Hustlers and Animals in the Slow Pitch, and the Colt 38's and the Rams in the Fast.

In the Slow Pitch League, the Hustlers took two out of three games from the Mets, 1 to 3, 8 to 5 and 16 to 5; the Animals won the first two games from the MPAD-RAB's, 15 to 11 and 2 to 1.

The Fast Pitch finalists Colt 38's won two out of three from the CG Choppers, 4 to 7, 11 to 0, and 7 to 1; the Rams took two out of three from the Lone Stars, 7 to 12, 8 to 6, and 9 to 8.

Beginner, Intermediate, Advanced Bridge Lessons To Be Offered

A series of bridge lessons for beginners, intermediate and advanced bridge players is being organized by Max Cone in conjunction with the MSC Duplicate Bridge Club, and information may be obtained by calling Ext. 4095.

Winners of the September Club Master Point game were: North-South, David Gibson and F. Tawil, first; Clarke Hackler and Bill Hamby, second; East-West, Ray Lynch and Henry Rotter, first; Alice Gowdy and Norma Dreszer, second.

At the rating point game on August 24, Ed Zeitler and Paul Fitzgerald were first, with Tom Moore and William Hamby, second. Sue Shrader and Leona Kempainen were first, North-South, and Charlie Brown and

Bud Parschall, first, East-West. Second place North-South went to Bill DeGeorge and John Gordon, and East-West second place winners were C. J. Bates and Charles Shoemake.

The MSC Duplicate Bridge Club is sanctioned by the American Contract Bridge League and authorized to award points in accordance with its regulations. Games are held at 7:15 p.m. each Tuesday in the Noncommissioned Officers' Club at Ellington AFB. The Club is open to all MSC and contractor employees and members of their immediate families.

If you would like to play and need a partner, you may call Leona Kempainen, Ext. 5339, and she will try to find one for you.

MSC United Fund Goal \$60,000, Solicitation Team Captains Named

The kickoff for the United Fund drive here at the Manned Spacecraft Center was held Monday of this week with an announced goal of \$60,000.

Heading up the Center drive this year are Philip Hamburger, chairman and Stanley Weiss, vice chairman. The drive is scheduled to continue through October 15.

The team captains in the various areas here at the Center are as follows:

Office of the Director, Stan Weiss; Public Affairs Office, Roy Alford; Center Medical Office, James Richards; Legal Office, Marvin Matthews; Flight Safety Office, Mary Sylvia; and NASA Regional Audit Office, Marvin Matthews.

Apollo Spacecraft Program Office, for all divisions, Curtis Collins.

Gemini Program Office, for all divisions, Robert Dittman.

Office of Assistant Director for Administration, Silvie Kelahek; Administrative Services Division, Jakey Woods; Procurement and Contracts Division, Art Garrison; Technical Services Division, J. D. Adkison; Photographic Technology Division, Lloyd Yorker; Management Services Division, Sherman Kendall; Engineering Division, Jim Stephens; and Resources Management Division, Dave Stokes.

Office of Assistant Director for Flight Crew Operations, Astronaut Office, John Peterson; Aircraft Operations Office, Jane Braun; and Flight Crew Support Division, Lee Nichols.

Office of Assistant Director for Engineering and Development, Betty Ensley; Information Systems Division, Rex Bauerlein; Crew Systems Division, Hugh Flemming; Computation and Analysis Division, Kath-

leen Sandras; Instrumentation and Electronic Systems Division, E. H. Cawley; Guidance and Control Division, Ed Ashley; Propulsion and Power Division, Jim Null; Structures and Mechanics Division, W. R. Downs; Advanced Spacecraft Technology, Claude Ingels; Office of Long-Range Planning, Bob Merrifield; and Experi-

ments Program Office, Abner Askew.

Office of Assistant Director for Flight Operations, Bebe Ballas; Flight Control Division, Clarence Walty; Landing and Recovery Division, Grady Henderson; Mission Planning and Analysis Division, W. J. Forsyth; and Flight Support Division, Tom Dorrrough.

MSC Employee Picnic (EP-3) Ticket Sales To Close Monday

Ticket sales for the third annual MSC Employee Picnic (EP-3) will close next Monday, September 20, in order to allow adequate time to order enough food and beverages.

The picnic will be held in the Galveston County Park near League City on the old Galveston Highway (No. 3). Activities will begin at 11 a.m., Saturday, September 25, with serving of the food to begin at 12 noon.

In addition to food and beverages, the picnic will feature dancing, games, contests, kiddie

rides, kiddie favors and fun for all ages. Bill Anders, MSC astronaut, will present trophies at the dance contest.

Tickets may be obtained from any Employees Activities Association representative. Prices are \$1 for adults, 50 cents for children age six thru 12, and children under five are to be admitted free.

Women's Basketball League To Be Formed

Women at the Center interested in entering a basketball league are asked to call Joan Bowen at Ext. 7575, or Dave Mullins at Ext. 5421 before September 30.

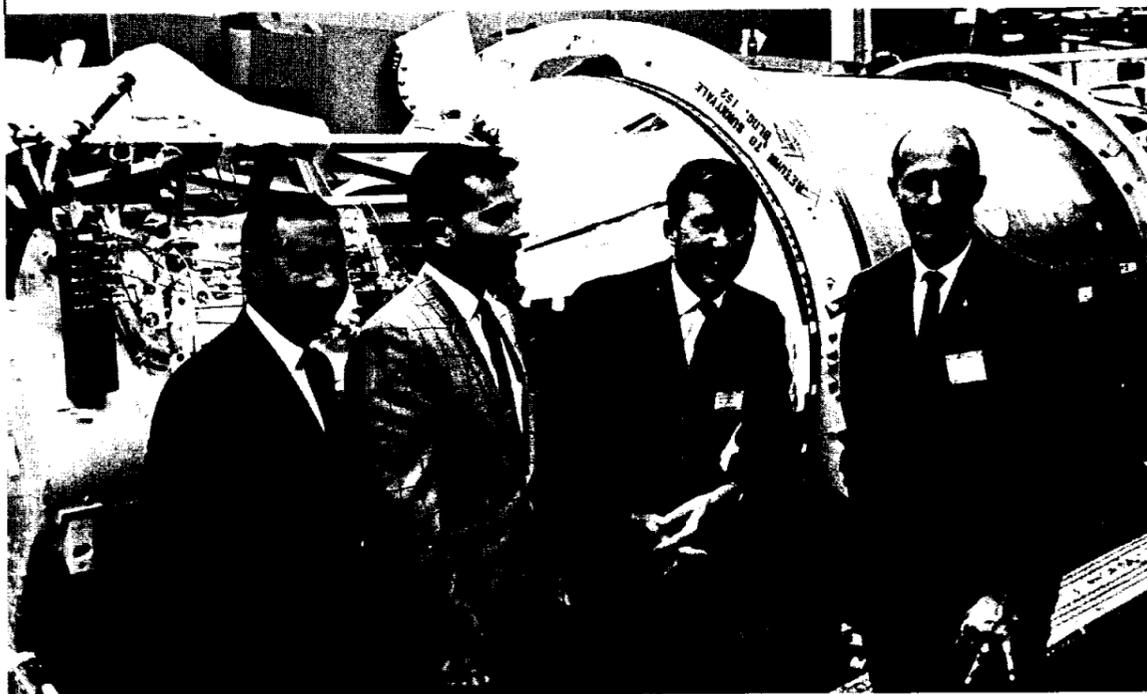
Games will be played in the Ellington AFB gym.

Barbershop Quartet Needs Bass Singers

The Barbershop Quartet Club here at MSC is looking for a bass singer to complete a quartet and also enough singers to form another quartet or a barbershop chorus.

Barbershop singers who are interested in joining the group may call Bill Folkes at Ext. 5185, or Bill Drewes at Ext. 5486.

Gemini VI Crews With Agena



TARGET VEHICLE—The crew and backup crew for the first rendezvous and docking in space with another vehicle are shown with the Gemini Agena Target undergoing tests at Lockheed Missiles & Space Co., Sunnyvale, Calif. Walter M. Schirra, second from right, and Thomas P. Stafford, right, will be command pilot and pilot for NASA's Gemini VI mission scheduled for this fall. From the left are Virgil I. Grissom and John W. Young, the backup command pilot and pilot. They were photographed during a recent visit to Lockheed where they inspected this Agena which two of them will meet again some 160 miles above the earth.

Space News ROUNDUP!

SECOND FRONT PAGE

MSC Personnel Division Head Accepts NASA Hq Position

Stuart H. Clarke, chief of the Manned Spacecraft Center Personnel Office since July 23, 1961, has accepted the position of deputy director, Personnel

Division NASA Hq., effective August 29.

Clarke will remain here at MSC until the first of October to coordinate the transfer of people from the Marshall Space Flight Center at Huntsville, Ala., to MSC. After completion of this assignment he is scheduled to move to the Washington, D.C. area.

In his new position at NASA Hq. Clarke will assist in developing and administering personnel activities affecting some 34,000 employees of the agency.

Clarke was born in Stamford, Conn., and in 1951 after he received his BS degree in business administration from the University of Bridgeport, he entered the Federal service at Aberdeen Proving Ground, Md., as an employee utilization representative. In 1956, he joined the personnel staff at the Army Ballistic Missile Agency as chief, Employee Utilization Branch. From May 1958 through April 1960, he served as deputy director of Personnel, ABMA, and as director of Personnel from April 1960 until he joined MSC.

He is married to the former Doris Mae Hartung of Baltimore, Md., and the couple has two children and presently reside in Houston.

Helicopter Rescue Scoop Attachment Developed Here

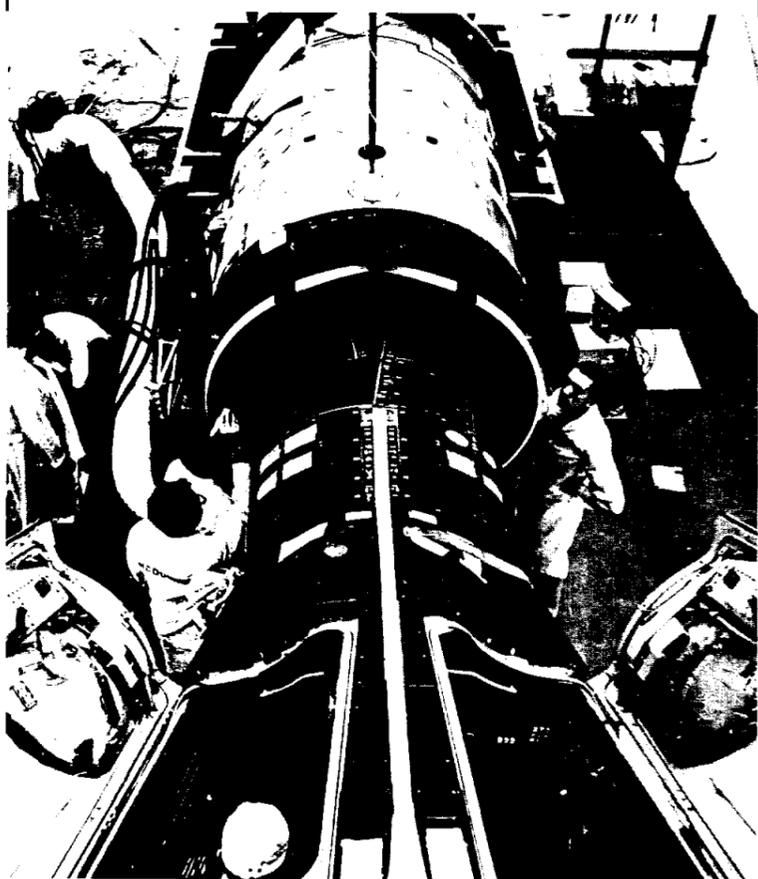
A scoop attachment for helicopter rescue and recovery operations in tight places has been developed at the Manned Spacecraft Center for astronaut recovery use.

Employing a retractable rigid boom and net attached to the helicopter's forward section, the device is offset toward the copter's entrance hatch side and can be pivoted so the net can be brought to the hatch for retrieval or storage.

Use of the boom enables the pilot to keep the subject in view at all times and eliminates the necessity of a crew member's leaving the craft to help secure the object being recovered—the net scoops it up.

The boom is made of tubular aluminum in the form of a cantilevered truss. The basket is made from plastic-covered wire net which is resistant to salt water.

Gemini VI Docking Exercise



COMPATIBILITY TESTS—Gemini VI spacecraft in a docking exercise, atop the timber tower at the RF Systems Test Site at Cape Kennedy. After the Agena target vehicle and the spacecraft have been placed on top of the timber tower, various RF compatibility tests will be conducted between the Agena target vehicle and the spacecraft both in the docked and undocked mode. During the time that the Agena target vehicle and the spacecraft are on the tower, the Gemini VI astronauts take part in the RF systems tests.

LEM Descent Stage Testing At WSTF



APOLLO MOONCRAFT—The first Lunar Excursion Module descent stage to arrive at the NASA White Sands Test Facility near Las Cruces, N.M., is lifted into a static test chamber capable of simulating altitudes to 105 thousand feet. The descent stage, minus its engine and without the spider-like legs that will stabilize the LEM on the moon's surface, will be mounted inside the altitude cell. The variable-thrust descent engine, built by Space Technology Laboratories, will be mated into the stage for propulsion development tests by Grumman Aircraft Engineering Corp., LEM prime contractor.

Manned Landing System

Paraglider Testing Resumed At Edwards

Manned testing of the paraglider landing system was resumed at Edwards AFB, California September 2 as North American test pilot Donald F. McCusker flew the delta glider wing from the crew station of a boilerplate Gemini spacecraft.

There have been two previous manned flights, with the last flight taking place in December 1964. The new series of manned flights is designed to obtain quantitative aerodynamic data, develop navigational techniques, and develop operational procedures for handling various wind

conditions. The program is being conducted by North American Aviation S&ID for the NASA Manned Spacecraft Center.

In each manned test, the vehicle will be towed to 8,000 feet by a Sikorsky S-61 helicopter and released. The pilot will glide back to the landing point using visual pilotage and radio navigation techniques.

Warren North, chief of the Flight Crew Support Division, described the September 2 flight as "excellent, with a good flare

and a good landing."

The paraglider is a steerable wing with a lift-to-drag ratio of three which was originally conceived to provide a land landing capability for the Gemini spacecraft. However, the wing could not be developed in time to be included in Gemini flights and has been continued as an operational research project.

A series of unmanned tests, using radio-controlled vehicles, were performed before the start of manned testing.

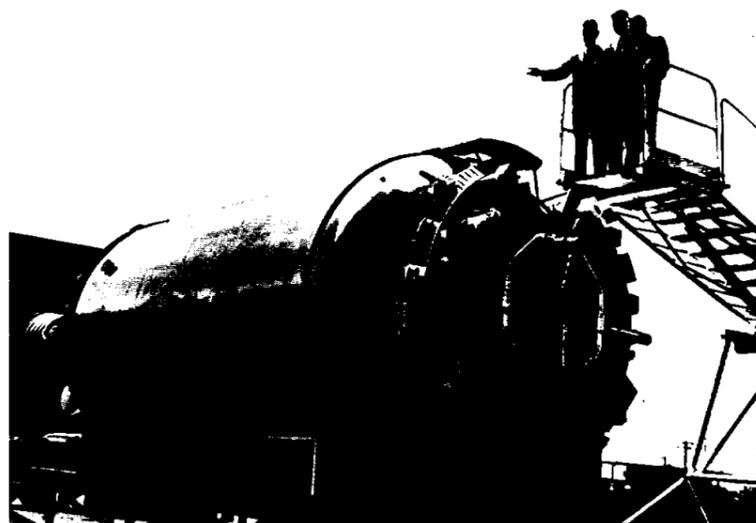
MSC's Centrifuge Has First Test

The Manned Spacecraft Center centrifuge facility was whirled for the first time last week, as Westinghouse Electric Co. engineers began tests on the large direct current motor which is the hub of the system.

The 50-foot arm of the centrifuge, which is designed to reproduce the gravity forces of launch or reentry, was spun at three revolutions per minute for a period of approximately one hour.

The 6,700 horsepower motor drove the weight of the arm, gimbel ring, and gondola ring. It will be tested at its maximum rate of 42 rpm by the Westinghouse team. Beginning in October, MSC engineers will begin using the facility to conduct acceptance tests, check the safety features, and train operators for the facility.

Voyager Spacecraft Booster Model



MODEL FOR MARS MISSION—A full-scale engineering model of the Centaur space vehicle scheduled to boost Voyager spacecraft toward Mars gets a final inspection by officials of the National Aeronautics and Space Administration and the Convair Division of General Dynamics Corporation, San Diego, Calif. The model is now at NASA's George C. Marshall Space Flight Center, Huntsville, Ala., where it will be assembled with models of the Saturn IB first stage and the S-IVB second stage of the Voyager launch vehicle.